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13. ABSTRACT (Maximum 200 words)

304 registrants from industry, academia, government agencies and research institutes participated in this symposium. The topics of each session focused on understanding new developments in the area of formation/detoxification of reactive intermediated and the consequence of their formation. The program consisted of 71 major talks, a Round Table Discussion and 108 free communications (posters). The nature of the presentations underscored the need to understand the molecular and cellular consequence of reactive intermediate formation. The final talk focused on new approaches and research needs in the area of reactive intermediates. The "Future Research Needs for the Application of Mechanistic Data to Risk Assessment" talk focused on how modern molecular biology tools can be incorporated into mechanistic studies. The training aspect of the symposium was highly successful. About one third of the participants were graduate students, post-doctoral fellows or junior investigators.

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1. **FINAL PERFORMANCE REPORT**

A. **Title:** 4th International Symposium on Biological Reactive Intermediates: Molecular and Cellular Effects and Their Impact on Human Health

B. **Location:** The Doubletree Hotel
445 S. Alvernon Blvd.
Tucson, AZ 85711

Dates: January 14-17, 1990

Host: Center for Toxicology
College of Pharmacy
University of Arizona
Tucson, AZ 85721

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C. **Organizing /Steering Committees, etc.: (continued)**

University of Arizona Conference Staff:

Sena Taylor, Conference Coordinator
Charleen Prytula
Kathy Sousa
Pamela Murray
Judith Stanfield

Rutgers University:

Bernadine Chmielowicz
Cathy Raymore

D. **Expected Registration:**

We had anticipated between 250-300 speakers and registrants. The actual figure was 304.

1. Target Population:

   a. Researchers active in the area of bioactivation of foreign chemicals, cell and molecular biologists with expertise in chemical toxicity; mechanistic-based toxicologists.

   b. Post-doctoral fellows and graduate students, primarily in toxicology

   c. Individuals involved with assessing the impact of chemicals on human health. This included occupational physicians, scientists at EPA, ATSDR; military personnel involved with industrial hygiene, environmental protection, etc.

E. **Conference Objectives and Accomplishments:**

Objective 1

To bring together researchers from the laboratories that are in the forefront of new developments in the areas of bioactivation/detoxification of foreign chemicals with researchers who focus on elucidating the molecular/cellular events associated with cell death and cell transformation.

Accomplishment

This objective was clearly met. 304 registrants from industry, academia, government agencies and research institutes participated in this symposium. As illustrated under objective 2, the topics of each session focused on understanding new developments in the area of formation/detoxification of reactive intermediates and the consequence of their formation. The program consisted of 71 major talks, a Round Table Discussion and 108 free communications (posters).

E. **Conference Objectives and Accomplishments: (continued)**

Objective 2

To encourage researchers to explore the molecular and cellular consequences of reactive intermediate formation. In other words, to explore how these reactive intermediates initiate the events that lead to various toxicities or how their continued formation is involved in the progression of toxicities.

Accomplishment

To accomplish these objectives, 56 speakers presented 20-30 minute talks. In addition, Chairpersons of the sessions highlighted the important concepts of their sessions. A Round Table Discussion ended the meeting. Its purpose was to review the highlights of the meeting, to discuss future research needs, and to assess how such information would enhance the risk assessment process. Poster sessions were held for those registrants wishing to make "free communications".

The various sessions presented at the symposium are listed below:

Session I.	Enzymatic Formation of Biological Reactive Intermediates
Session II.	Active Oxygen Species as Biological Reactive Intermediates
Session III.	Molecular Targets of BRI: Proteins/Lipid
Session IV.	Immunological Consequences of Protein Binding
Session V.	DNA as a Target of BRI: Site of Binding on DNA
Session VI.	DNA as a Target of BRI: Implications of DNA Binding
Session VII.	Cellular Consequences of BRI
Session VIII.	Interactions Between Liver and Other Cells by BRI
Session IX.	Messenger Mediated Intraorgan Effects
Session X.	Update on the Toxicity of Reactive Metabolites from Particular Chemical Classes
Session XI.	Human Health Risk Assessment and BRI
Session XII	Predicting the Effects of BRI on Human Health

The nature of the presentations underscored the need to understand the molecular and cellular consequences of reactive intermediate formation. The final talk by Dr. Donald Reed and the Round Table Discussion, which ended the meeting, focused on new approaches and research needs in the area of reactive intermediates. Dr. Donald Reed discussed the "Future Research Needs for the Application of Mechanistic Data to Risk Assessment". His talk focused on how modern molecular biology tools can be incorporated into mechanistic studies. Dr. Reed's talk was followed by a Round Table Discussion chaired by Dr. Roger McClellan. Other participants in the Round Table included: Drs. P. Farmer (UK), H. Bolt (FRG), R. Kato (Japan) and D. Henschler (FRG).

Objective 3

To provide a training forum for graduate students and for individuals who need to apply the knowledge about biological reactive intermediates in the decision-making process (risk assessment, regulation).

Accomplishment

The training aspect of the symposium was highly successful. About one third of the participants were graduate students, post-doctoral fellows or junior investigators. Some were invited to make major presentations, while most of the others presented posters and/or participated in discussions with established investigators and one another.

E. Conference Objectives and Accomplishments: (continued)

Objective 4

To publish the proceedings of the symposium in the series "Advances in Experimental Medicine and Biology," a long running series of successful books marketed by Plenum Press.

Accomplishment

A copy of the inside cover and the Table of Contents of the proceedings is attached.

Objective 5

The organizers of the 4th International Symposium on Biological Reactive Intermediates thank the following sponsors:

Accomplishment

Agency for Toxic Substances and Disease Registry; Beckman Instruments; Burroughs Wellcome Company; Dow Chemical Company; Eli Lilly and Company; Hoffmann-La Roche, Inc.; Glaxo, Inc.; ICI Americas, Inc.; G.D. Searle and Company; Merck Sharpe Dohme Research Laboratories; National Institute of Environmental Health Sciences; The Procter and Gamble Company; Smith Kline Beecham; U.S. Air Force; U.S. Army; U.S. Environmental Protection Agency; Sterling-Winthrop Research Institute; Syntex Corporation; The Upjohn Company.

BIOLOGICAL REACTIVE INTERMEDIATES IV

Molecular and Cellular Effects and Their Impact on Human Health

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